

The results with latest
version of BeAGLE

y^* calculate (recalculate E)

All positive hadrons in the data with x_F (with m_π) less than -0.2 are assigned the proton mass, all other hadrons are treated as pions.

if charge<0 (assume are pi-)

Four vector in lab frame: $(p_x, p_y, p_z, \sqrt{p_x^2 + p_y^2 + p_z^2 + m_\pi^2})$ (p_x, p_y, p_z are MC truth, m_π is the mass of π)

do boost \longrightarrow four vector in cms frame $(p_x^*, p_y^*, p_z^*, E_\pi^*)$

if charge>0

Assume four vector in lab frame: $(\frac{p_x}{charge}, \frac{p_y}{charge}, \frac{p_z}{charge}, \sqrt{\frac{p_x^2}{charge^2} + \frac{p_y^2}{charge^2} + \frac{p_z^2}{charge^2} + m_\pi^2})$

do boost \longrightarrow four vector in cms frame $(p_x^*, p_y^*, p_z^*, E_\pi^*)$

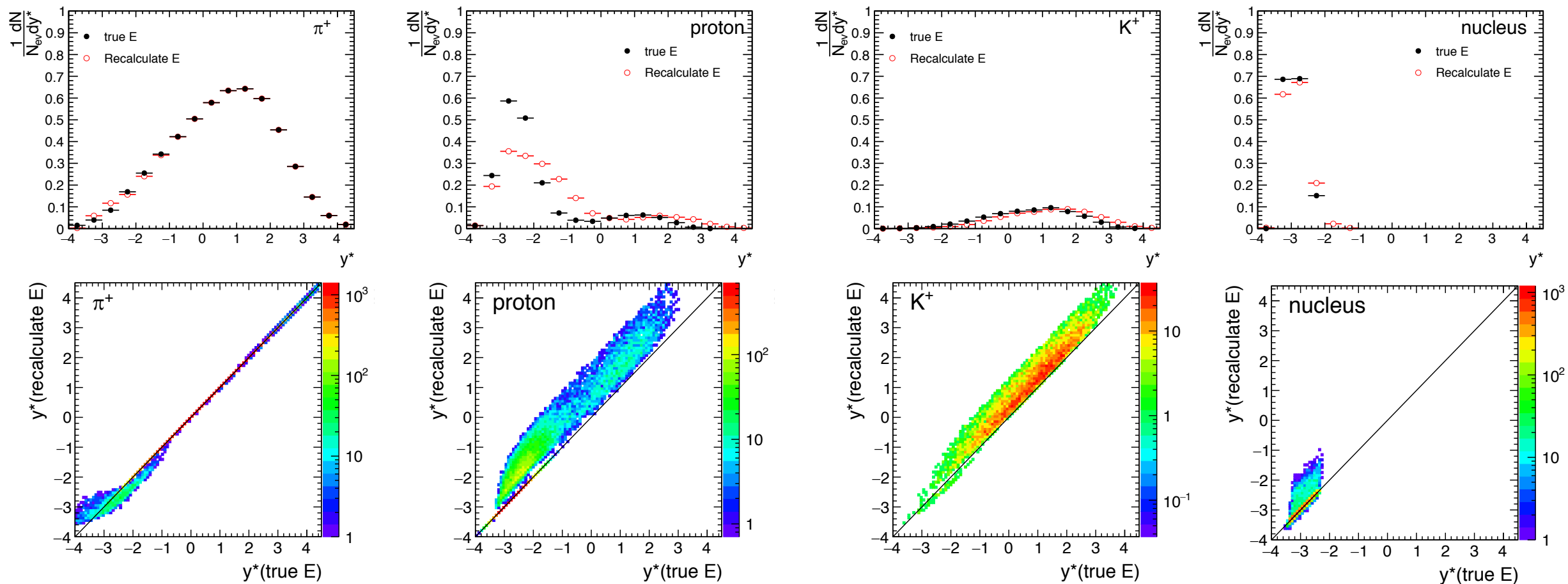
if $x_F = \frac{2p_z^*}{W} > -0.2$, $(p_x^*, p_y^*, p_z^*, E_\pi^*)$

p_x, p_y, p_z are MC truth, m_π is the mass of π , m_p is the mass of p

if $x_F = \frac{2p_z^*}{W} < -0.2$, four vector in lab frame: $(\frac{p_x}{charge}, \frac{p_y}{charge}, \frac{p_z}{charge}, \sqrt{\frac{p_x^2}{charge^2} + \frac{p_y^2}{charge^2} + \frac{p_z^2}{charge^2} + m_p^2})$

do boost $\longrightarrow (p_x^*, p_y^*, p_z^*, E_p^*)$

Ycms distribution of π^+ , K^+ , p, nucleus

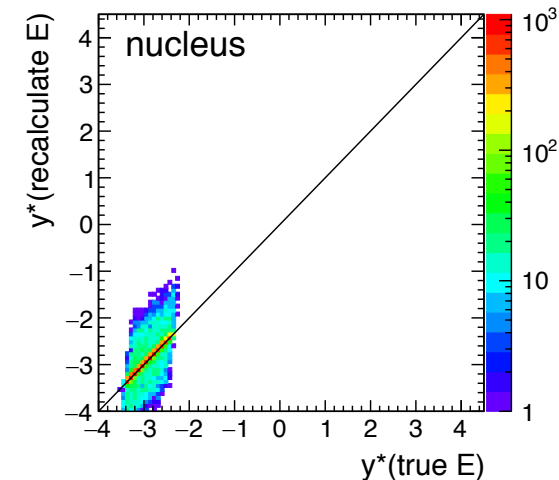
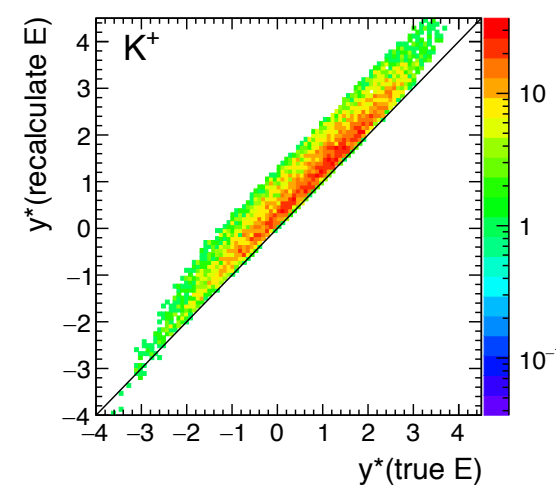
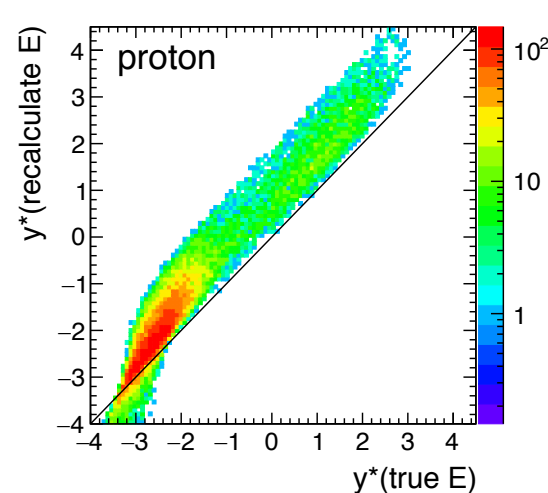
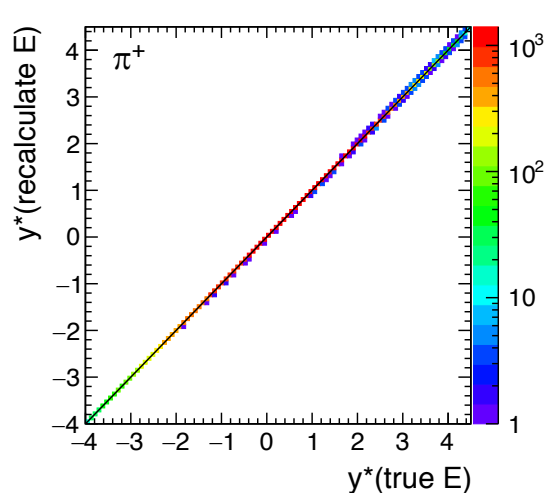
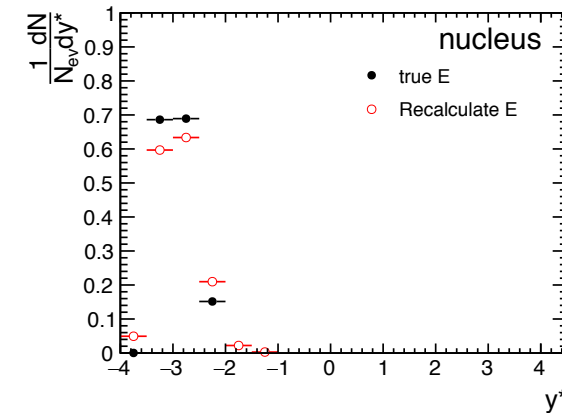
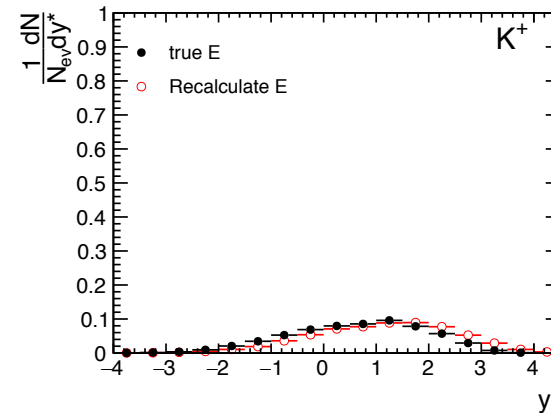
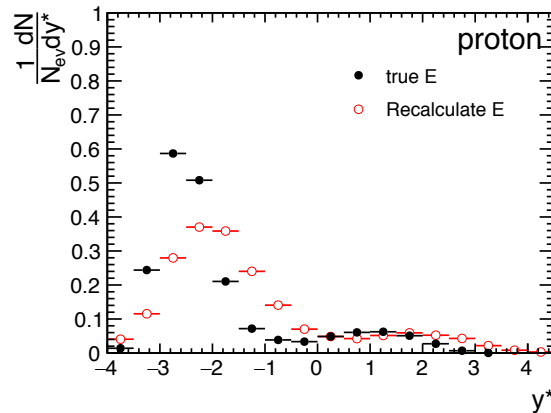
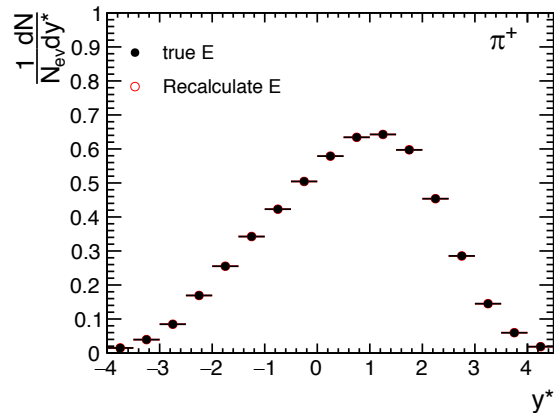


True E : boost to cms frame with true E.

Recalculate E: boost to cms frame with recalculate E by the method in previous slide (page 2).

Ycms distribution of π^+ , K^+ , p, nucleus

assume all particles are with pion mass

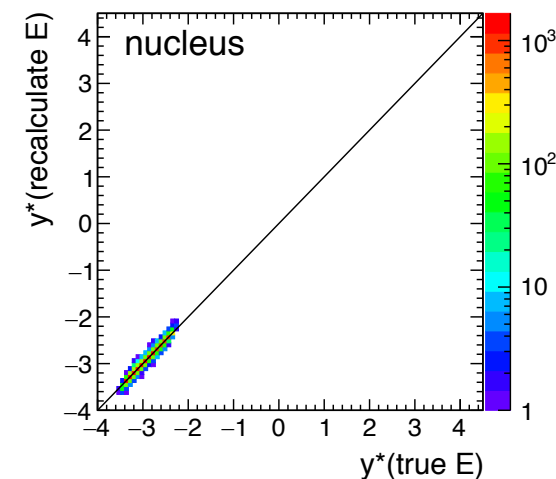
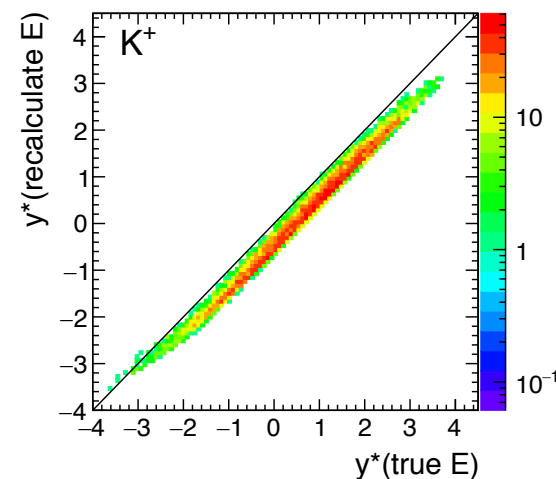
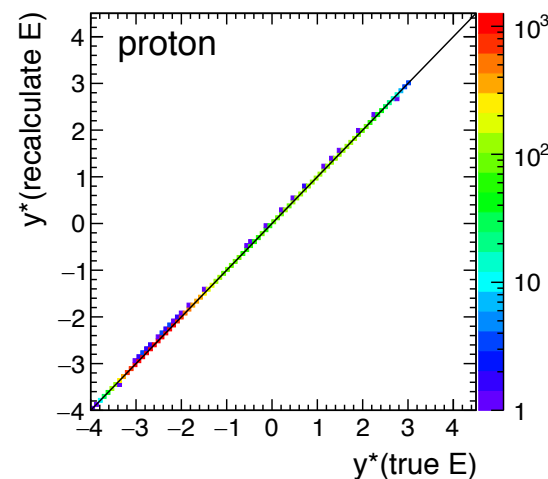
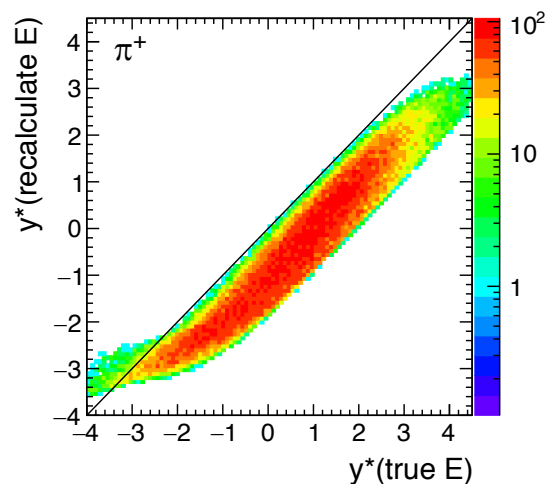
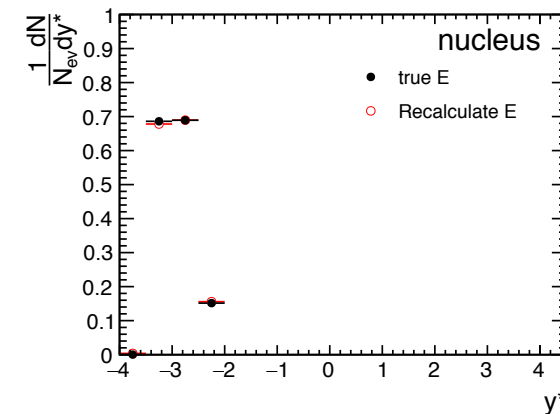
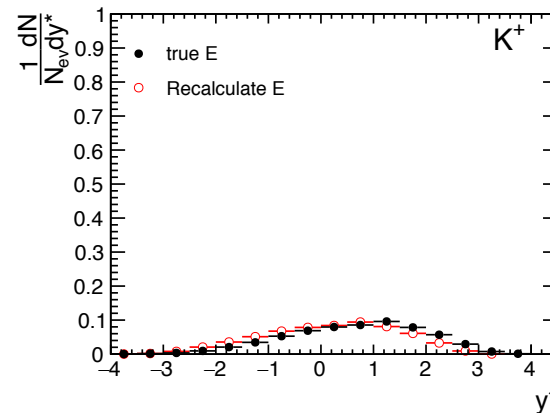
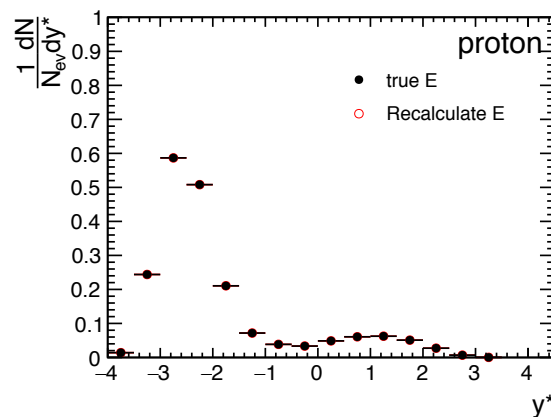
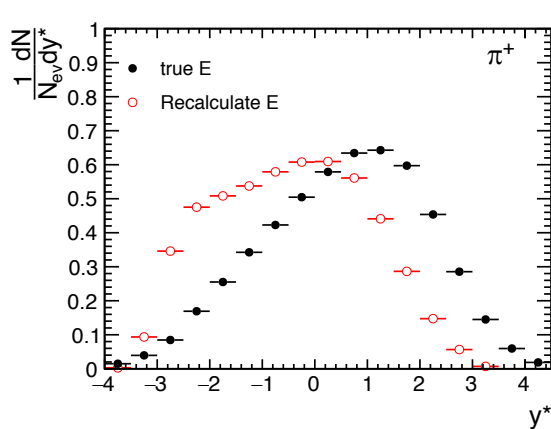


True E : boost to cms frame with true E.

Recalculate E: boost to cms frame with recalculate E with pion mass.

Ycms distribution of π^+ , K^+ , p, nucleus

assume all particles are with proton mass

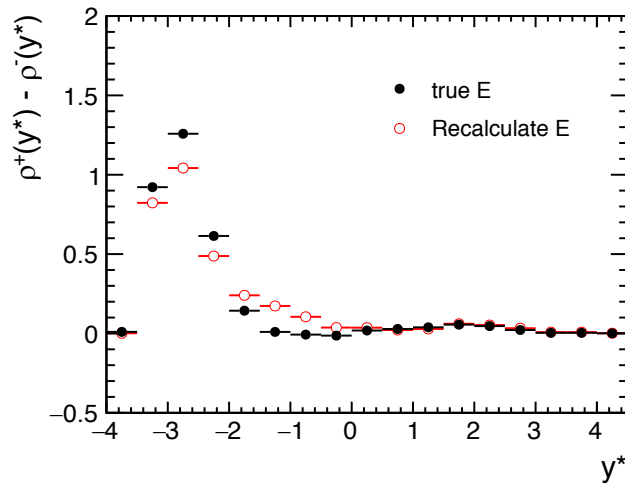


True E : boost to cms frame with true E.

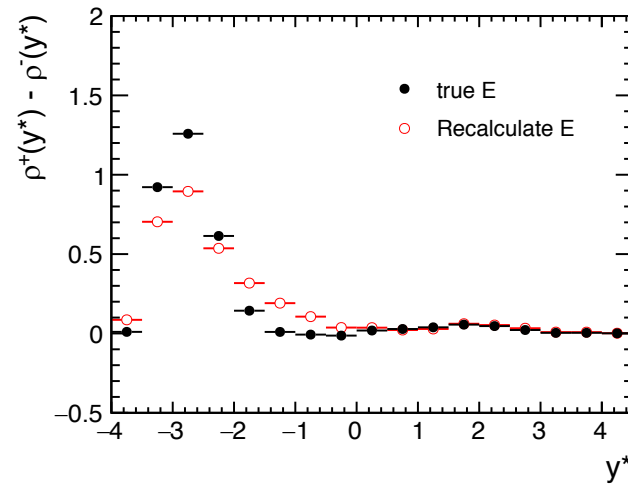
Recalculate E: boost to cms frame with recalculate E with **proton mass**.

hadronic net charge distribution

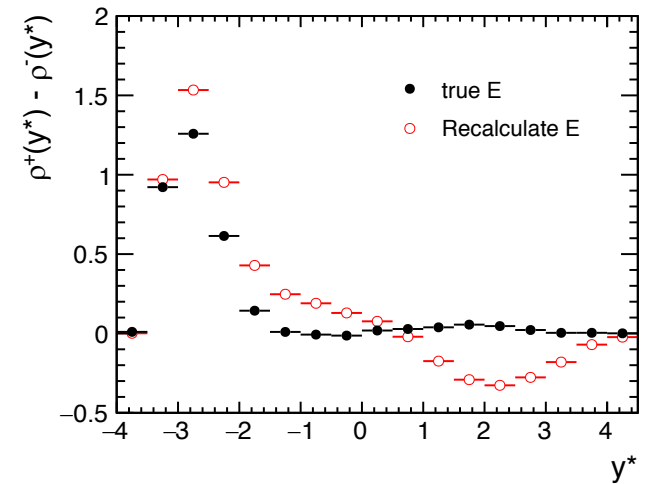
True E : boost to cms frame with true E.



Recalculate E: boost to cms frame with recalculate E by the method in slide 2.



assume all particles
are with pion mass



assume all particles are
with proton mass